FEDERAL RAILROAD ADMINISTRATION

OFFICE OF SAFETY

FY 2005 Technical Training Course Catalog

SAFETY IMPROVEMENT & DEVELOPMENT TEAM

Foreword

This course catalog is provided as a service to our internal Office of Safety customers, which includes participating state inspectors and program managers. The courses listed are the only ones we contemplate providing during FY 2005, but this is subject to change if the needs of the Office of Safety dictate.

The catalog includes the current FY 2005 Training Calendar, which may change if circumstances require. We will provide calendar updates if such changes do happen. When reviewing the catalog, please bear in mind:

1. For FY 2005, the SIDT will deliver all training at the BNSF Training Center on the campus of Johnson County Community College in Overland Park, Kansas. The notification memo for each class will detail lodging and transportation specifics.

2. We base technical training on organizational needs, and therefore consider it mandatory. SIDT performs various types of analyses to determine the organizational needs, including feedback from Headquarters, the regions, and the inspectors.

3. The training is for internal Office of Safety customers. Although we may invite people from the NTSB, Transport Canada, etc., to attend on occasion, we do not provide training for external customers from other governmental or civilian organizations. We simply do not have the resources to do so.

4. We do not honor requests to attend particular courses or classes. We use a specific methodology to offer training to Federal and State Inspectors and Specialists in a resource responsible and equitable manner. The SIDT Management Analyst manages the selection process.

5. The SIDT Administrative Specialist prepares training travel orders for Federal and Participating State Inspectors, Specialists, and other employees assigned to attend training. Except for unusual circumstances, we do **not** issue training travel orders for Staff Directors, Regional Administrators, or Deputy Regional Administrators. If a Regional Administrator or Deputy Regional Administrator wishes to attend an in-house class, they may do so, but will travel on their annual order. The same holds true for State Program Managers, unless they also actively perform inspections. They may attend courses, but must travel at state expense.

6. When we plan and budget for contractor training, we cannot take the groups mentioned above into account. Therefore, if someone from this group wishes to attend a contractor course, they must receive prior approval from the SIDT Coordinator. **In no case** will we use a slot allotted to an inspector or specialist to accommodate people from this group.

7. Current policy is to schedule Chief Inspectors only for courses that relate to their previous discipline of expertise, general courses, or for courses developed specifically for them. SIDT developed a cross-discipline course for Chief Inspectors that we will deliver during FY 2005.

8. Current policy dictates that GS-5 and GS7 level trainees do **not** attend formal training classes developed for journey level inspectors, except for attendance at Multi-Regional Conference Workshops. A specific program of training, which consists primarily of one-on-one tutelage with experienced inspectors, is available for trainees at these grade levels. As a rule of thumb, the same standard applies to participating state inspector trainees.

FRA FY 2005 Technical Training Calendar
Revised Date: February 22, 2005

Class ID	Course ID	Course Name	Classroom	Arrive	Depart	Hotel Name
0501	S&TC 210	Operating Rules - Methods of Operation	44	12/05/04	12/10/04	Drury Inn
0502	Track 204B	Track Recurrency 2004	114	12/06/04	12/10/04	Drury Inn
0503	MP&E 201	MP&E Fundamentals	116	12/12/04	12/17/04	Pear Tree Inn
0504	GN 207	Accident Investigation Fundamentals	114	01/09/05	01/14/05	Pear Tree Inn
0505	MP&E 205	MP&E Recurrency 2004	116	01/10/05	01/14/05	Drury Inn
0506	Track 204B	Track Recurrency 2004	104	01/10/05	01/14/05	Drury Inn
0507	OP 213	Operational Testing & Human Performance Science	Drury 111	02/06/05	02/11/05	Pear Tree Inn
0508	MP&E 205	MP&E Recurrency 2004	116	02/07/05	02/11/05	Drury Inn
0509	GN 208	FRA Report Writing Principles for Federal Employees	114	02/14/05	02/18/05	Pear Tree Inn
0510	OP 213	Operational Testing & Human Performance Science	Drury 111	02/27/05	03/04/05	Pear Tree Inn
0511	MP&E 205	MP&E Recurrency 2004	116	02/28/05	03/04/05	Drury Inn
0512	GN 202	Investigative Skills Fundamentals	114	03/07/05	03/11/05	Pear Tree Inn
0513	GN 208	FRA Report Writing Principles for Federal Employees	116	03/07/05	03/11/05	Drury Inn
0514	GN 306	Chief Inspector Cross-Discipline Fundamentals (w/o OP)	114	03/20/05	03/25/05	Pear Tree Inn
0515	OP 213	Operational Testing & Human Performance Science	44	04/03/05	04/08/05	Pear Tree Inn
0516	S&TC 201	Signal Fundamentals Course	116	04/03/05	04/08/05	Pear Tree Inn
0517	GN 208	FRA Report Writing Principles for Federal Employees	114	04/11/05	04/15/05	Pear Tree Inn
0518	GN 207	Accident Investigation Fundamentals	114	04/17/05	04/22/05	Pear Tree Inn
0519	GN 306	Chief Inspector Cross-Discipline Fundamentals (w/o MPE)	116	04/17/05	04/22/05	Drury Inn
0520	HM 201	Hazardous Materials Fundamentals	114	05/01/05	05/06/05	Pear Tree Inn
0521	OP 213	Operational Testing & Human Performance Science	44	05/01/05	05/06/05	Pear Tree Inn
0522	S&TC 210	Operating Rules - Methods of Operation	116	05/01/05	05/06/05	Drury Inn
0523	GN 208	FRA Report Writing Principles for Federal Employees	114	05/09/05	05/13/05	Pear Tree Inn
0524	Track 206	Track Recurrency 2005 - 2006	114	05/16/05	05/20/05	Pear Tree Inn
0525	MP&E 206	MP&E Recurrency 2005	114	05/22/05	05/27/05	Pear Tree Inn
0526	OP 213	Operational Testing & Human Performance Science	104	05/22/05	05/27/05	Drury Inn
0527	HM 210	HM Recurrency 2005	116	05/23/05	05/27/05	Drury Inn
0528	MP&E 206	MP&E Recurrency 2005	116	06/05/05	06/10/05	Pear Tree Inn
0529	S&TC 210	Operating Rules - Methods of Operation	44	06/05/05	06/10/05	Drury Inn
0530	HM 210	HM Recurrency 2005	114	06/06/05	06/10/05	Drury Inn
0531	GN 207	Accident Investigation Fundamentals	114	06/12/05	06/17/05	Pear Tree Inn
0532	Track 206	Track Recurrency 2005 - 2006	116	06/13/05	06/17/05	Drury Inn
0533	HM 210	HM Recurrency 2005	114	06/20/05	06/24/05	Pear Tree Inn
0534	S&TC 211	Grade Crossing Inspector Recurrency 2005	116 & 53	06/26/05	07/01/05	Pear Tree Inn
0535	HM 210	HM Recurrency 2005	114	07/11/05	07/15/05	Pear Tree Inn
0536	OP 201A	OP Fundamentals - Phase One	116	07/11/05	07/15/05	Drury Inn
0537	Track 201	Track Safety Standards - Fundamentals	114	07/17/05	07/22/05	Pear Tree Inn
0539	S&TC 210	Operating Rules - Methods of Operation	44	07/17/05	07/22/05	Drury Inn
0540	GN 202	Investigative Skills Fundamentals	114	07/25/05	07/29/05	Pear Tree Inn
0541	GN 208	FRA Report Writing Principles for Federal Employees	116	07/25/05	07/29/05	Drury Inn
0542	MP&E 206	MP&E Recurrency 2005	116	07/31/05	08/05/05	Pear Tree Inn
0543	MP&E 206	MP&E Recurrency 2005	116	08/07/05	08/12/05	Pear Tree Inn
0544	Track 206	Track Recurrency 2005 - 2006	114	08/15/05	08/19/05	Pear Tree Inn
0538	OP 212	Operating Rules - Methods of Operation	114	08/28/05	09/02/05	Drury Inn
0545	OP 207A	OP Recurrency 2004	116	08/15/05	08/19/05	Drury Inn
0546	OP 201B	***OP Fundamentals - Phase Two - Cancelled & 0538 added***				***Cancelled***
0547	Track 206	Track Recurrency 2005 - 2006	116	08/29/05	09/02/05	Drury Inn
0550	GN 307	Human Performance Science Fundamentals	NA	04/24/05	04/29/05	San Antonio, TX
0551	MP&E 307	Amtrak Acela Equipment	NA			Wilmington, DE

Course_ID	*Hours*	*Prerequisite*	*Source*
GN 101	*N/A*	*None*	*Contractor*

Course Name

The Railroad - What It Is, What It Does

Description and Objectives

Description: This is a correspondence course from The Railway Education Bureau (REB) that will be completed by all grade level GS-5 or GS-7 FRA inspector trainees. This course provides a historical look at the railroad, from the coal fed iron horses to the computer-assisted system in use today.

The objective of this course is to provide a basic understanding of what a railroad is, with an overview of such subjects as, history, cars, peripheral equipment, passenger services, engineering, law, accounting, administration, organization, and operations. The course includes the following eight modules:

1. Railroad Technology, The Route System.
2. The Track: Alignment and Structure.
3. The Locomotive.
4. The Railroad Car and the Train.
5. Signals and Communication, Railroad Operation.
6. Car Types, Terminal Operations, Classification and Blocking.
7. Shipping, Unit-Trains, Intermodal Traffic, Rail Passenger Services.
8. Railroad Organization.

Regional managers should notify Barbara Hall, SIDT Management Analyst, via e-mail when a person is employed as a GS-5 or GS-7 level inspector trainee. Ms. Hall will arrange to send the course to the appropriate region for assignment. Grading of the correspondence lessons is performed by the REB, who will send the graded lessons to the SIDT Program Assistant for verification. The SIDT Program Assistant will forward the lessons to the appropriate Regional Administrator for further review and interface with the trainee.

Course_ID	*Hours*	*Prerequisite*	*Source*
GN 202	*24*	*None*	*Contractor*

Course Name

Investigative Skills Fundamentals

Description and Objectives

Description: This course is for those who are expected to perform an FRA investigation. The course focuses on developing interviewing, photography, and note taking skills. The course consists of interactive lectures and a field trip. Practical exercises are built around a grade crossing accident scenario. Each class will be monitored by a FRA training specialist to ensure field trip safety and to answer questions about FRA's witness interviewing policies.

Objectives: At the completion of the course, participants will be able to:

1. Use their FRA provided cameras to photograph an accident site.
2. Prepare notes including a photo log.
3. Conduct an interview.

Course_ID	*Hours*	*Prerequisite*	*Source*
GN 207	*32*	*GN-202*	*FRA*

Course Name

Accident Investigation Fundamentals

Description and Objectives

Description: This course is intended for anyone who may be assigned to perform an FRA accident investigation. There are 10 learning modules covering FRA's statutory and regulatory authority to conduct investigations, communication guidelines, fatigue and crew resource management techniques for listing and prioritizing information gathering objectives, note taking and interviewing skills reinforcement, alcohol & drug involvement, locomotive event recorders, hazardous materials involvement, and FRA accident reporting requirements.

The course consists of a series of short interactive lectures using slide presentations and participant guides, followed by practical exercises for each of the modules. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a 25 question pre and post test designed to evaluate participant knowledge levels at the beginning and ending of the course.

Objectives: At the completion of the course, participants will be able to:

1. Recognize their statutory and regulatory authority to investigate accidents.
2. Analyze accident reports submitted by railroads to FRA.
3. Explain circumstances where fatigue may be a causal factor.
4. Understand the Threat and Error Management Model.
5. Use recognized investigative techniques to list and prioritize objectives.
6. Identify note taking and interview requirements, policies, and techniques.
7. Recognize when locomotive event recorder data, alcohol and drug involvement, and hazardous materials involvement must be included in reports.
8. Prepare an FRA F6180.39 Factual Railroad Accident Investigation Report.

Course_ID	*Hours*	*Prerequisite*	*Source*
GN 208	*24*	*None*	*FRA / Contractor*

Course Name

FRA Report Writing Principles for Federal Employees

Description and Objectives

Description: This three-day course is intended for Federal Office of Safety Field Employees who are required to write and edit reports. The first day is a grammar refresher workshop delivered by a contractor with a minimum of a Master's Degree in English and adult teaching credentials. The second day includes modules on editing, general writing principles, and planning and organizing FRA reports. Students practice writing and editing sections of accident and complaint investigative reports on the third and final day.

Objectives: At the completion of the course, participants will be able to:

1. Use grammar rules more effectively.
2. Write sentences and paragraphs following the principles of clear and concise government writing.
3. Apply editing techniques to their own writing.
4. Plan and organize FRA reports.
5. Write reports that will be clear to the reader at the first reading.
6. Revise and edit reports using automated word processing program features.

Course_ID	*Hours*	*Prerequisite*	*Source*
GN 306	*32*	*None*	*FRA*

Course Name

Chief Inspector Cross-Discipline Fundamentals

Description and Objectives

Description: This course is intended for all FRA Chief Inspectors who may be assigned to perform cross-discipline inspections on small railroads within one of the FRA regions. There are six learning modules covering the objectives listed below. The course consists of a series of short interactive lectures using PowerPoint slide presentations and participant guides including team exercises in a classroom setting. The participants review the standard practices of each of the five FRA disciplines and learn how to conduct certain safety inspections of the small railroad properties which may be assigned to them. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course.

Objectives: At the completion of the course, participants will be able to:

1. Compare the regulations covered by the different FRA disciplines.
2. Identify significant inspection considerations of the five FRA disciplines.
3. Select the appropriate way to report defective conditions or handle unsafe non-regulatory conditions found during field inspections.
4. Retrieve data and prepare safety and inspection information for regional report and presentation purposes.

Course_ID	*Hours*	*Prerequisite*	*Source*
GN 307	*34*	*None*	*FRA / U.S. Air Force*

Course Name

Human Performance Science Fundamentals

Description and Objectives

Description: This course provides the participant with the fundamental human performance knowledge needed to support their regions in determining the underlining causes of human factor accidents and incidents. It will introduce the Threat and Error Management Model, the Human Factors Classification and Analysis System, and the concepts of Crew Resource Management. The training includes a two-day fatigue and fatigue countermeasure course delivered by the U.S. Air Force.

Overall, the course will focus on the dangers of fatigue in rail operations, the basic mechanisms underlying fatigue, the most common causes of overly tired personnel, and the best techniques of optimizing alertness in the operational environment. Participants will receive instruction on the effective design of crew work/rest schedules and the use of the Fatigue Avoidance Scheduling Tool (FAST). The course mixes classroom learning examples with simulated exercises based on actual accidents and hands-on exercises using the FAST program.

Objectives: At the end of this course, participants will be able to:

1. Assess the physiological and cognitive impact of fatigue on human performance.

2. Explain the principles of Crew Resource Management and how it can be used as a fatigue countermeasure.

3. Use the Fatigue Avoidance Scheduling Tool (FAST) to analyze work rest schedules.

4. Recognize how human performance is affected by system design and organizational culture.

5. Use human performance models (Threat and Error Management Model, Human Factors Analysis and Classification System) as analytical tools.

6. Perform fatigue and human factors assessments during railroad accident investigations.

Course_ID	*Hours*	*Prerequisite*	*Source*
HM 201	*32*	*None*	*FRA*

Course Name

Hazardous Materials Fundamentals

Description and Objectives

Description: This course provides recently hired journey level Federal and State Hazardous Materials Inspectors, and GS-9 level HM Trainees with the knowledge, skills and abilities necessary to perform inspections at their grade level. The course is an overview of the following: Hazmat Compliance Manual, FRA Field Orientation and Training Guide, AAR Specification for Tank Cars- M1002, and 49 CFR Parts 171, 172, 173, 174, 178, 179 and 180.

This course consists of a series of short interactive lectures using a slide presentation and participant guides, followed by practical team exercises for each learning module. Practice exercises will consist of situational scenarios and group discussions. There is a multiple choice pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of this course, participants will be able to:

1. Apply appropriate FRA Hazmat regulations when performing site inspections.
2. Recognize deviations from the regulations.
3. Prepare an F6180.96 inspection report based on a given scenario.
4. Identify railroad and/or shipper responsibility for achieving compliance.
5. Understand inspector discretion when considering civil penalty recommendations.
6. Recall appropriate reference source documents for guidance.
7. Calculate the filling limits/density requirements for loading tank cars.

Course_ID	*Hours*	*Prerequisite*	*Source*
HM 210	*24*	*None*	*FRA*

Course Name

HM Recurrency 2005

Description and Objectives

Description: This course is intended for all Federal and State Hazardous Materials Inspectors. The course is an overview of various activities of inspection, analysis, evaluation, and consists of separate learning modules of the following: regulatory updates, non-accident releases program (root-cause analysis), tank car filling limits (overloaded shipments), and radiation safety during inspections

The course consists of a series of short interactive lectures using a slide presentation and participant guides, followed by practical exercises for each of the modules. A building block concept is used for the course modules and the practical exercises so that the information is presented in sequential order. There is a 25 question pre and post test that is designed to evaluate participant knowledge levels at the beginning and ending of the course. A third and fourth level evaluations will be administered to reinforce learning and analyze course effectiveness.

Objectives: At the completion of this course, participants will be able to:

1. Understand the current changes in Hazardous Materials regulations.
2. Analyze root-causes leading to non-accident releases of hazardous chemicals being transported by rail.
3. Compute the maximum authorized filling limits of tank cars.
4. Demonstrate the use of safety equipment for protection against excessive exposure to radiation.

Course_ID	*Hours*	*Prerequisite*	*Source*
MP&E 201	*32*	*None*	*FRA*

Course Name

MP&E Fundamentals

Description and Objectives

Description: This course provides recently hired journey level Federal and State MP&E Inspectors, and GS-9 level MP&E Trainees with the knowledge, skills and abilities necessary to perform inspections at their grade level. The course includes instruction on the MP&E Compliance Manual, Code of Federal Regulations (49 CFR), and the Single Car Air Brake Test (SCT) Manual. New inspectors learn the specific methodologies related to Locomotives (229), Safety Appliances, (231) Power Brakes and Drawbar Heights (232), Freight Car Safety Standards (215), Locomotive and Car Glazing Standards (223), Blue Signals (218), Rear of Train Markers (221).

Objectives: At the completion of this course, participants will be able to:

1. Apply appropriate MP&E regulations when performing site inspections.
2. Recognize deviations from the regulations.
3. Prepare an F6180.96 inspection report based on a given scenario.
4. Understand an individual employee's compliance responsibilities.
5. Assess whether railroads use proper sequential steps when performing single car tests.

Course_ID	*Hours*	*Prerequisite*	*Source*
MP&E 205	*24*	*None*	*FRA*

Course Name

MP&E Recurrency 2004

Description and Objectives

Description: This course is intended for all MP&E Specialists and Federal/State journey level inspectors. This course is an overview of various MP&E activities in connection with inspection reports, violation reports, special notice for repair reports, activity codes, and defect/non-defect codes. This course will also provide participants with a thorough overview of the new MP&E Compliance Manual. The course consists of a series of short interactive lectures using a slide presentation, participant guides, and job aids, followed by practical team exercises for each learning module.

Objectives: At the completion of the course, participants will be able to:

1. Prepare a MP&E Violation Report (F6180.109), based on a given scenario.
2. Prepare a Special Notice for Repair Report (F6180.8), based on a given scenario.
3. Recall appropriate MP&E activity codes.
4. Use appropriate MP&E defect/non-defect codes.
5. Use the MP&E Compliance Manual.

Course_ID	*Hours*	*Prerequisite*	*Source*
MP&E 206	*32*	*MP&E 205*	*FRA*

Course Name

MP&E Recurrency 2005

Description and Objectives

Description: This course is intended for journey level MP&E inspectors and specialists. The course will provide participants with the in-depth knowledge, skills, and abilities necessary to (1) perform specific inspections of freight cars and their components in order to determine compliance with Federal regulations, and (2) to determine when locomotive safety systems have been properly inspected and tested. The course consist of a series of short interactive lectures using slide presentations, participant guides, job aids, and lab demonstrations, followed by practical exercises.

Objectives: At the completion of the course, participants will be able to:

1. Apply FRA standards when inspecting Constant Contact Side Bearings (CCSB's).
2. Apply FRA regulations pertinent to restrictions of maintenance-of-way equipment.
3. Apply FRA standards when inspecting locomotives.
4. Identify locomotive safety systems and assess their proper operation.
5. Access data from locomotive event recorders.
6. Discuss event recorder data based on given scenarios.
7. Apply safety glazing standards.

Course_ID	*Hours*	*Prerequisite*	*Source*
MP&E 307	*32*	*None*	*Contractor*

Course Name

Amtrak Acela Equipment

Description and Objectives

Description: The Amtrak Acela Equipment course provides selected inspectors with knowledge, skills, and abilities necessary to perform inspections of Tier II passenger equipment and all related interior/exterior machinery, electrical systems, and appurtenances.

This course will provide participants a review of the equipment history, development, problems incurred and corrective action taken by operating railroads. Detailed instruction will be provided on 49 CFR 238 Sub-parts 503 and 109, which will include Train Brake Test, Daily Inspection, Periodic Maintenance. The course consists of classroom lectures, slide presentations, participant guide, and shop facility tours to observe maintenance activities.

Objectives: At the completion of the course, participants will be able to:

1. Recall Tier II Passenger Equipment history, and equipment development.
2. Apply FRA Regulation Standards during Tier II Passenger Equipment inspections.
3. Identify mechanical and electrical systems of Tier II Passenger Equipment.
4. Assess the Amtrak's internal policies and procedures for the inspection, testing and maintenance of Tier II Passenger Equipment.

Course_ID	*Hours*	*Prerequisite*	*Source*
OP 201A	*24*	*None*	*FRA*

Course Name

OP Fundamentals - Phase One

Description and Objectives

Description: This course is intended for recently hired Federal and State Operating Practices Inspectors. This course introduces the participants to 49 CFR Parts 217, 218, 220, and 221, and includes a review of the OP Compliance Manual with emphasis on the Focused Inspection approach and the Switching Operations Fatality Analysis initiative. The course will also emphasize personal safety requirements when performing inspections on or about railroad tracks or property. The course mixes classroom learning examples with practical exercises to gain an application level knowledge of topics covered.

The course is divided into two separate week-long courses, with Phase Two covering 49 CFR Parts 219, 225, 228, 238, and 240.

Objectives: At the conclusion of this course participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors.
2. Favor the correct interpersonal skills necessary to perform quality inspections.
3. Select the appropriate methods for addressing safety issues identified during inspections.
4. Discuss the philosophy of operations testing.
5. Recognize the preparatory responsibilities of inspectors conducting onboard train inspections and yard inspections.
6. Ensure compliance with blue signal protection and utility employee provisions of Part 218 within a railroad yard.
7. Ensure compliance with 49 CFR Part 220 and associated railroad operating rules.
8. Ensure compliance with 49 CFR Part 221.

Course_ID	*Hours*	*Prerequisite*	*Source*
OP 201B	*32*	*None*	*FRA*

Course Name

OP Fundamentals - Phase Two

Description and Objectives

Description: This course is intended for recently hired Federal and State Operating Practices Inspectors. During the training each inspector will learn the fundamentals of conducting routine inspections specific to the following 49 CFR Parts: 219, 225, 228, and 240. There is a mix of lectures with practical exercises to simulate application level knowledge of each topic. The final module covers the operational safety and primary responsibilities of OP and Track Inspectors when riding an FRA track geometry car.

Objectives: At the conclusion of this course participants will be able to:

1. Identify the Federal prohibitions against alcohol and drug use.
2. Contrast the categories of accidents and incidents for post-accident testing.
3. Explain the accident reporting and record keeping responsibilities of railroads.
4. Apply the Hours of Duty recordkeeping regulations.
5. Use acquired knowledge of the engineer certification regulation and interpretations to recognize areas of non-compliance in selected practical exercises.
6. Understand OP and Track Inspector responsibilities when riding an FRA track geometry vehicle.

Course_ID	*Hours*	*Prerequisite*	*Source*
OP 207A	*24*	*None*	*FRA*

Course Name

OP Recurrency 2004

Description and Objectives

Description: The course is intended for all Federal and State OP Inspectors. There are seven learning modules covering roadway worker protection, waiver petitions, enforcement actions against railroads, inspection reports, complaint investigation, individual liability, and violation reports. The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by practical exercises for each of the modules. The participants, using a given practical exercise, write a complaint investigation memorandum, inspection report, violation report, and a regional warning letter. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a 25 question, multiple choice, pre and post test that is designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. List the procedures for issuance of a permanent or temporary waiver petition.
2. Prepare an inspection report (F6180.96) based on a given practical exercise.
3. Perform complaint investigations in accordance with FRA policy.
4. Prepare a complaint investigation memorandum based on a given scenario.
5. Identify the six types of enforcement tools available against railroads, and the seven factors that should be analyzed in determining whether or not to recommend civil penalties.
6. Prepare violation reports.
7. Identify the types of individual liability tools available for use by FRA.

Course_ID	*Hours*	*Prerequisite*	*Source*
OP 212	*32*	*None*	*Contractor*

Course Name

Operating Rules - Methods of Operation

Description and Objectives

Description: This course provides participants with a detailed understanding of railroad industry operating rules particular to methods of operation. The rules covered are those in effect according to the following codes of operating rules: GCOR, NORAC, CSX, and NS. The course will also emphasize personal safety requirements when performing inspections on or about railroad tracks and property. The course mixes classroom learning examples with simulated exercises, to gain an application level knowledge of the methods of operation in effect in the rail industry.

Objectives: At the conclusion of this course, participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors when conducting inspections.
2. Demonstrate knowledge of commonly used signal aspects and indications, and be able to apply rules to train operations.
3. Interpret and apply instructions contained in a typical railroad timetable. Interpret and apply special instructions and track warrants in a simulated train run.
4. Demonstrate knowledge of the rules governing authority for the movement of trains at the application level, included in GCOR, NORAC, CSX and NS rule books, through simulated train runs.
5. Identify, at the application level, the various signal aspects and indications included in GCOR, NORAC, CSX and NS rule books.
6. Detect non-compliance with operating rules in a simulated train ride exercise.
7. Successfully complete a comprehensive rules exam.

Course_ID	*Hours*	*Prerequisite*	*Source*
OP 213	*32*	*None*	*FRA*

Course Name

Operational Testing & Human Performance Science

Description and Objectives

Description: This course is intended for all FRA OP Inspectors and Specialists, and Chief Inspectors with an OP background. It will provide an overview of 49 CFR Part 217 (Railroad Operating Rules), with special emphasis on 217.9 (Program of operational tests and inspections), and the Science of Human Performance. There are learning modules covering FRA's authority under Part 217, with a focus on comparing OP inspector records, railroad operational testing records, and field monitoring of operational testing sessions. The course also teaches inspectors to apply the Science of Human Performance when accompanying railroad officers during testing sessions and discussing safety with employees.

Objectives: At the completion of the course, participants will be able to:

1. Categorize operating rules for review.
2. Analyze a railroad's operational testing records.
3. Monitor a railroad's operational testing sessions.
4. Compare data from railroad records with FRA inspection data and operational testing sessions.
5. Assess a railroad's program of instruction on operating rules.
6. Resolve Part 217 compliance problems.
7. Apply the Science of Human Performance to influence how railroads approach operational testing.
8. Use knowledge of Human Performance Science when discussing safety with railroad employees and officers.

Course_ID	*Hours*	*Prerequisite*	*Source*
S&TC 201	*32*	*None*	*FRA*

Course Name

Signal Fundamentals Course

Description and Objectives

Description: This course is intended for all recently hired Federal and State S&TC inspectors who may be assigned to perform FRA inspections, complaint investigations and other general duties associated with an FRA S&TC Inspector's position.

The course consists of a series of short interactive lectures using a slide presentation and participant guides, followed by practical team exercises. The participants, using practical exercises, prepare inspection reports, list inspection priorities, practice how they would approach certain inspections and investigations of signal systems, and learn signal system terminology and definitions. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a multiple choice, pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. List the proper sequence of events involved in performing a signal system inspection.
2. List the various inspection and enforcement tools available while inspecting railroads.
3. Write a brief memorandum report detailing defective conditions to various signal system scenarios.
4. Write a brief technical summary report using industry standard terminology and FRA definitions.
5. Identify various signal systems, including related operating rules and methods of operation utilized in the railroad industry.
6. Identify various highway grade crossing signal systems, including the review of special grade crossing operating rules and special instructions.
7. List the proper regulation to be used when citing defective railroad S&TC conditions.
8. Recognize appropriate inspection procedures and how to establish good rapport with industry customers.

Course_ID	*Hours*	*Prerequisite*	*Source*
S&TC 210	*32*	*None*	*Contractor*

Course Name

Operating Rules - Methods of Operation

Description and Objectives

Description: This course is essentially identical to the OP 212 Methods of Operations course. It provides participants with a detailed understanding of railroad industry operating rules particular to methods of operation. The rules covered are those in effect according to the following codes of operating rules: GCOR, NORAC, CSX, and NS. The course will also emphasize personal safety requirements when performing inspections on or about railroad tracks and property. The course mixes classroom learning examples with simulated exercises, to gain an application level knowledge of the methods of operation in effect in the rail industry.

Objectives: At the conclusion of this course, participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors when conducting inspections.
2. Demonstrate knowledge of commonly used signal aspects and indications, and be able to apply rules to train operations.
3. Interpret and apply instructions contained in a typical railroad timetable. Interpret and apply special instructions and track warrants in a simulated train run.
4. Demonstrate knowledge of the rules governing authority for the movement of trains at the application level, included in GCOR, NORAC, CSX and NS rule books, through simulated train runs.
5. Identify, at the application level, the various signal aspects and indications included in GCOR, NORAC, CSX and NS rule books.
6. Detect non-compliance with operating rules in a simulated train ride exercise.
7. Successfully complete a comprehensive rules exam.

Course_ID	*Hours*	*Prerequisite*	*Source*
S&TC 211	*32*	*None*	*FRA*

Course Name

Grade Crossing Inspector Recurrency 2005

Description and Objectives

Description: This course is intended for all Participating State Highway-Rail Grade Crossing Inspectors. There are six learning modules covering the objectives listed below. The course consists of a series of short interactive lectures using a PowerPoint slide presentation and participant guides, followed by lab or field trip exercises. The participants review the proper inspection techniques and current FRA inspection policies, learn how to accurately perform highway-rail grade crossing signal inspections. This includes identifying highway-rail grade crossing signal non-compliance, accurately locating defective grade crossing signal conditions, and applying hours of service rules for railroad employees involved in signal service. A building block concept is used for the practical exercises so that the learning lessons are reinforced throughout the course. There is a multiple choice, pre and post test designed to evaluate participant knowledge levels at the beginning and end of the course.

Objectives: At the completion of the course, participants will be able to:

1. Use the various enforcement tools available to them.
2. Classify the various types of grade crossing inspection activity.
3. Perform grade crossing signal inspections.
4. List and discuss applicable rules and rule interpretations regarding highway grade crossing signal inspections.
5. Select appropriate inspection techniques.
6. Identify defects and violations encountered during highway grade crossing signal inspections as a practical exercise.
7. Use recent changes to interpretation and rule application of 234 Highway-Rail Grade Crossing Signal System Safety Compliance Manual.
8. Understand the Hours of Service law as it applies to railroad employees involved in signal service.

Course_ID	*Hours*	*Prerequisite*	*Source*
Track 201	*32*	*None*	*FRA*

Course Name

Track Safety Standards - Fundamentals

Description and Objectives

Description: This course introduces the participants to 49 CFR Part 213 Subparts A-F Track Safety Standards, general railroad industry safety requirements, and personal safety requirements, when inspectors are on or about the railroads' tracks or property. The course combines classroom learning examples with practical field exercises to gain hands-on experience about the rail industry.

Objectives: At the completion of this course, participants will be able to:

1. Explain how each item of personal safety equipment is used by inspectors when conducting a track inspection.
2. Relate commonly used track terms to actual components in the track structure.
3. Interpret a typical railroad timetable and track chart/profile.
4. Use the inspection tools that are necessary to conduct a track inspection.
5. Interpret and analyze data generated by the Automated Track Inspection Program.
6. Clarify the minimum requirements for each subpart of 49 CFR Part 213.
7. Apply the Track Safety Standards and the Track Compliance Manual guidelines during inspections.

Course_ID	*Hours*	*Prerequisite*	*Source*
Track 204B	*24*	*None*	*FRA*

Course Name

Track Recurrency 2004

Description and Objectives

Description: This course introduces participants to iPAQ and DTN (Digital Track Notebook) technology. Track inspectors will be trained in this new electronic technology that allows easy access to the regulations contained in 49 CFR Part 213, Track Safety Standards, and quick calculations on simplified worksheets that automate evaluation of equations in the safety standards. This aids the inspector by rapidly capturing and transferring the necessary track measurements and information directly into a digital data acquisition system with the capability to record vital information, then print the inspection information through RISPC, and is adaptable to contain customized railroad rules, procedures, and industry telephone numbers and addresses.

Objectives: At the completion of this course, participants will be able to:

1. Install and synchronize the FRA computer iPAQ and DTN software applications, including customizing voice and note taking features.
2. Understand DTN applications in order to generate a F6180.96 track inspection report.
3. Demonstrate the transfer of track measurements and rule information directly into the DTN using the capability to record and print information through RISPC.
4. Interpret and analyze data generated by the Automated Track Inspection Program downloadable through the DTN, locating track exceptions using the GPS application.
5. Demonstrate the ability to access 49 CFR Part 213, Track Safety Standards using Reg-Trieve.
6. Demonstrate quick calculation methods using automated worksheets to arrive at correct determination of values for given defects.

Course_ID	*Hours*	*Prerequisite*	*Source*
Track 206	*24*	*Track 204B*	*FRA*

Course Name

Track Recurrency 2005-2006

Description and Objectives

Description: This course introduces the participants to the principles of CWR, track geometry car operational safety, and DTN (Digital Track Notebook) geometry principles. The principles, characteristics, and safety critical procedures associated with CWR and sample CWR programs will be evaluated for compliance with FRA's minimum safety standards. The operational safety and primary responsibilities assigned to OP and Track inspectors, and safety rules and data parameters generated by the track geometry cars will be reviewed. The course builds on the fundamentals taught in Track 204B, including DTN technology. The training associates the higher geometry functions of quick calculations on simplified worksheets that automate evaluation of equations in the track safety standards. These calculations include crosslevel, warp, alinement, rockoff, excessive elevation, runoff, twist 31, and gage.

Objectives: At the completion of this course, participants will be able to:

1. Identify the safety critical procedures necessary for maintaining the lateral stability of CWR track.
2. Evaluate CWR programs to determine their compliance with minimum standards.
3. Identify the responsibilities assigned to OP and Track inspectors when riding an FRA track geometry vehicle.
4. List the eight data parameters generated by FRA's track geometry vehicle.
5. Interpret geometry data, from the practice CD, to identify track exceptions.
6. Compute values using the DTN automated quick calculation methods for crosslevel, warp, alinement, rockoff, excessive elevation, runoff, twist 31, and gage from the practical exercises.